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(54) **APTAMERS THAT BIND TO NATURAL AND SYNTHETIC CANNABINOIDS**

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(58) **Field of Classification Search**
CPC C12N 15/115
See application file for complete search history.

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(57) **ABSTRACT**

The subject invention provides materials and methods for single-step detection of small molecules, e.g., natural and synthetic cannabinoids, in a sample. The subjection invention provides nucleic acids materials, e.g., aptamers (nucleic acid oligonucleotides) that can bind to natural and/or synthetic cannabinoids. The method for detecting a natural or synthetic cannabinoid in a sample comprises contacting the sample with an aptamer-based sensor selective for the natural or synthetic cannabinoid, and sensitively and rapidly detecting the natural or synthetic cannabinoid in the sample. The aptamer-based sensor comprises aptamers that can specifically binds to natural and/or synthetic cannabinoids with nanomolar dissociation constant.

17 Claims, 16 Drawing Sheets

Specification includes a Sequence Listing.